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OM protein - protein search, using sw model

Run on:          October 26, 2001, 17:47:30 ; Search time 33.53 Seconds
                                              (without alignments)
                                              381.499 Million cell updates/sec

Title:           US-09-494-585-2
Perfect score:   1118
Sequence:        1 MAPLAEVGGFLGGLEGLGQQ..........FKFVDPERVFELYKGLLMYT 211

Scoring table:   BLOSUM62
                 Gapop 10.0 , Gapext 0.5

Searched:        412676 seqs, 60623988 residues

Total number of hits satisfying chosen parameters:      412676

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :       A_Geneseq_0601:*
                 1: /SIDS1/gcgdata/geneseq/geneseqp/AA1980.DAT:*
                 2: /SIDS1/gcgdata/geneseq/geneseqp/AA1981.DAT:*
                 3: /SIDS1/gcgdata/geneseq/geneseqp/AA1982.DAT:*
                 4: /SIDS1/gcgdata/geneseq/geneseqp/AA1983.DAT:*
                 5: /SIDS1/gcgdata/geneseq/geneseqp/AA1984.DAT:*
                 6: /SIDS1/gcgdata/geneseq/geneseqp/AA1985.DAT:*
                 7: /SIDS1/gcgdata/geneseq/geneseqp/AA1986.DAT:*
                 8: /SIDS1/gcgdata/geneseq/geneseqp/AA1987.DAT:*
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                10: /SIDS1/gcgdata/geneseq/geneseqp/AA1989.DAT:*
                11: /SIDS1/gcgdata/geneseq/geneseqp/AA1990.DAT:*
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                15: /SIDS1/gcgdata/geneseq/geneseqp/AA1994.DAT:*
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                21: /SIDS1/gcgdata/geneseq/geneseqp/AA2000.DAT:*
                22: /SIDS1/gcgdata/geneseq/geneseqp/AA2001.DAT:*

      Pred. No. is the number of results predicted by chance to have a
      score greater than or equal to the score of the result being printed,
      and is derived by analysis of the total score distribution.
```

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1118	100.0	211	21	AAB18635	Amino acid sequenc
2	1118	100.0	211	22	AAB62817	Human fibroblast g
3	778.5	69.6	220	18	AAW11548	Amino acid sequenc
4	774.5	69.3	208	13	AAR27207	Glia activating fa
5	774.5	69.3	208	13	AAR27213	Glia activating fa
6	774.5	69.3	208	15	AAR56505	Glia activating fa
7	774.5	69.3	208	16	AAR80784	Fibroblast growth
8	774.5	69.3	208	16	AAR70822	FGF-9. Homo sapie
9	774.5	69.3	208	18	AAW11547	Amino acid sequenc
10	774.5	69.3	208	19	AAW75719	Fibroblast growth
11	774.5	69.3	208	19	AAW53024	Fibroblast growth
12	774.5	69.3	208	21	AAB10299	Fibroblast growth
13	774.5	69.3	208	21	AAY87856	Human FGF-9 protei
14	774.5	69.3	208	21	AAY90418	FGF-9, SEQ ID NO:1
15	774.5	69.3	208	21	AAY32341	Human fibroblast g
16	774.5	69.3	208	22	AAB61663	FGF9 protein. Hom
17	774.5	69.3	208	22	AAB50290	Human fibroblast g
18	774.5	69.3	208	22	AAB50295	Human fibroblast g
19	774.5	69.3	208	22	AAB50710	Human fibroblast g
20	769.5	68.8	207	15	AAR56504	Glia activating fa
21	758.5	67.8	205	13	AAR27209	Glia activating fa
22	758.5	67.8	205	15	AAR56506	Glia activating fa
23	758.5	67.8	206	13	AAR27211	Glia activating fa
24	758.5	67.8	206	13	AAR27212	Glia activating fa
25	758.5	67.8	206	15	AAR56507	Glia activating fa
26	742	66.4	175	15	AAR56508	Glia activating fa
27	742	66.4	176	15	AAR56509	Glia activating fa
28	742	66.4	177	13	AAR27208	Glia activating fa
29	742	66.4	178	13	AAR27210	Glia activating fa
30	729	65.2	159	15	AAR56510	Glia activating fa
31	729	65.2	160	15	AAR56511	Glia activating fa
32	708.5	63.4	207	20	AAY05474	Human FGF-16 prote
33	708.5	63.4	207	21	AAY58429	Human fibroblast g
34	705.5	63.1	207	20	AAY05473	Rat FGF-16 protein
35	705.5	63.1	207	21	AAY58428	Rat fibroblast gro
36	691.5	61.9	198	20	AAY05475	Rat FGF-16 protein
37	691.5	61.9	198	21	AAY58432	Rat truncated fibr
38	683	61.1	142	15	AAR56503	Glia activating fa
39	670	59.9	173	20	AAY05476	Rat FGF-16 protein
40	670	59.9	173	21	AAY58431	Rat truncated fibr
41	325	29.1	268	19	AAW53031	Fibroblast growth
42	324.5	29.0	266	21	AAY97887	Rat fibrobalst gro
43	324	29.0	266	21	AAY87852	Human FGF-5 protei
44	324	29.0	266	21	AAY87858	Human FGF-5 protei
45	324	29.0	267	9	AAP82964	Encoded by ORF 2 o

ALIGNMENTS

```
RESULT 1
AAB18635
ID   AAB18635 standard; Protein; 211 AA.
XX
AC   AAB18635;
XX
DT   22-JAN-2001  (first entry)
XX
DE   Amino acid sequence of human fibroblast growth factor (FGF)-20.
XX
KW   FGF20 VP16..., gene delivery vector; eye disease; neovascular disease;
KW   neurotrophic factor; anti-angiogenic factor; eye disease; glaucoma;
KW   macular degeneration; diabetic retinopathy; retinitis pigmentosa;
KW   inherited retinal degeneration; surgery-induced retinopathy;
KW   retinal detachment; photic retinopathy; toxic retinopathy;
KW   trauma-induced retinopathy; wet age related macular degeneration;
KW   ARMD; retinopathy; fibroblast growth factor-20; FGF-20.
XX
OS   Homo sapiens.
XX
PN   WO200054813-A2.
XX
PD   21-SEP-2000.
XX
PF   15-MAR-2000; 2000WO-US07062.
XX
PR   15-MAR-1999;   99US-0124460.
PR   06-JAN-2000; 2000US-0174984.
XX
PA   (CHIR ) CHIRON CORP.
PA   (REGC ) UNIV CALIFORNIA.
XX
PI   Manning WC,  Dwarki VJ,  Rendahl K,  Zhou S,  McGee LH,  Lau D;
PI   Flannery JG,  Miller S,  Wang F,  Di Polo A;
```

```
XX
DR   WPI; 2000-618862/59.
DR   N-PSDB; AAA75630.
XX
PT   Treating or preventing eye diseases or inhibiting neovascular disease
PT   of the eye, comprises intraocularly administering a gene delivery
PT   vector that directs expression of neurotrophic factors or
PT   anti-angiogenic factors -
XX
PS   Disclosure; Fig 29; 86pp; English.
XX
CC   The present sequence represents human fibroblast growth factor (FGF) 20.
CC   FGF 20 is expressed using a gene delivery vector of the invention.
CC   Vectors of the invention are used for treating or preventing eye
CC   diseases, or inhibiting neovascular disease of the eye. The gene
CC   delivery vector directs the expression of one or more neurotrophic
CC   factors, or anti-angiogenic factors, such that the disease of the eye
CC   is prevented or treated. The gene delivery vectors are useful for
CC   treating or preventing diseases of the eye such as macular degeneration,
CC   diabetic retinopathy, inherited retinal degeneration such as retinitis
CC   pigmentosa, glaucoma, surgery-induced retinopathy, retinal detachment,
CC   photic retinopathy, toxic retinopathy or trauma-induced retinopath, and
CC   for inhibiting neovascular diseases such as wet age related macular
CC   degeneration (ARMD) or retinopathy of prematurity.
XX
SQ   Sequence   211 AA;

  Query Match             100.0%;  Score 1118;  DB 21;  Length 211;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-111;
  Matches  211;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARGGPGAAQLAHL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 maplaevggflggleglgqqvgshfllppagerppllgerrsaaersarggpgaaqlahl 60

Qy         61 HGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGLYLG 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 hgilrrrqlycrtgfhlqilpdgsvqgtrqdhslfgilefisvavglvsirgvdsglylg 120

Qy        121 MNEKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRDGAR 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 mnekgelygsekltsecifreqfeenwyntyssniykhgdtgrryfvalnkdgtprdgar 180

Qy        181 SKRHQKFTHFLPRPVDPERVPELYKDLLMYT 211
              |||||||||||||||||||||||||||||||
Db        181 skrhqkfthflprpvdpervpelykdllmyt 211


RESULT 2
AAB62817
ID   AAB62817 standard; Protein; 211 AA.
XX
AC   AAB62817;
XX
DT   02-MAY-2001  (first entry)
XX
DE   Human fibroblast growth factor-CX (FGF-CX) amino acid sequence.
XX
KW   Fibroblast growth factor CX; FGF-CX; wound healing; haematopoiesis;
KW   cell growth; proliferation; tumour; restenosis; psoriasis; human;
KW   Dupuytren's contracture; Kaposi sarcoma; rheumatoid arthritis;
KW   cartilage repair; bone repair; exostosis; hallux valgus deformity;
KW   achondroplasia; cerebral lesion; cerebral oedema; senile dementia;
KW   Alzheimer's disease; diabetic neuropathy; osteoporosis.
XX
OS   Homo sapiens.
XX
PN   WO200107595-A2.
XX
PD   01-FEB-2001.
XX
PF   27-JUL-2000; 2000WO-US20405.
XX
PR   27-JUL-1999;   99US-0145899.
PR   31-JAN-2000; 2000US-0494585.
PR   03-JUL-2000; 2000US-0609543.
XX
PA   (CURA-) CURAGEN CORP.
XX
PI   Jeffers M,  Shimkets RA,  Prayaga SK,  Boldog FL,  Yang M,  Burgess C;
PI   Fernandes E,  Herrmann JL,  Larochelle WJ,  Lichenstein H;
XX
DR   WPI; 2001-159717/16.
DR   N-PSDB; AAF62049.
XX
PT   New human fibroblast growth factor FGF-CX polypeptide, useful for
PT   treating tissue proliferation disorders such as tumors, restenosis,
PT   psoriasis, diabetic complications, Kaposi sarcoma and rheumatoid
PT   arthritis
XX
PS   Claim 1; Fig 1; 128pp; English.
XX
CC   This invention relates to human fibroblast growth factor-CX (FGF-CX) and
CC   the DNA sequence encoding it. FGF-CX protein and polynucleotide sequences
CC   are useful for treating or preventing a disorder associated with aberrant
CC   expression, processing or physiological interactions of FGF-CX
CC   characterised by insufficient or ineffective growth of a cell or tissue.
CC   FGF-CS is also useful for promoting growth of cells which are in the
CC   vicinity of a wound, vascular system, those involved in haematopoiesis or
CC   erythropoiesis, cells in the lining of the gastrointestinal tract or
CC   cells in hair follicles. Other uses include, inhibiting cell growth.
CC   FGF-CX is useful for treating, preventing or delaying a tissue
CC   proliferative disorder such as tumours, restenosis, psoriasis,
CC   Dupuytren's contracture, diabetic complications, Kaposi sarcoma, and
CC   rheumatoid arthritis. Compositions containing FGF-CX can be used to
CC   stimulate cartilage or bone repair. Compositions containing FGF-CX
CC   binding agents can be used to treat diseases such as multiple or solitary
CC   hereditary exostosis, hallux valgus deformity and achondroplasia. FGF-CX
CC   may be used in diagnosing or treating glial cell related disorders,
CC   cerebral lesions or to treat cerebral oedema, senile dementia,
CC   Alzheimer's disease, or diabetic neuropathy. FGF-CX also has
CC   osteogenesis-promoting activity and can be used for treating bone
CC   fractures and osteoporosis. FGF-CX polypeptides may be used as platelet
CC   increasing agents, or for treating cerebral nervous diseases. The present
CC   sequence represents the human FGF-CX protein.
XX
SQ   Sequence   211 AA;

  Query Match             100.0%;  Score 1118;  DB 22;  Length 211;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-111;
  Matches  211;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARGGPGAAQLAHL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 maplaevggflggleglgqqvgshfllppagerppllgerrsaaersarggpgaaqlahl 60

Qy         61 HGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGLYLG 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 hgilrrrqlycrtgfhlqilpdgsvqgtrqdhslfgilefisvavglvsirgvdsglylg 120

Qy        121 MNEKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRDGAR 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 mnekgelygsekltsecifreqfeenwyntyssniykhgdtgrryfvalnkdgtprdgar 180

Qy        181 SKRHQKFTHFLPRPVDPERVPELYKDLLMYT 211
              |||||||||||||||||||||||||||||||
Db        181 skrhqkfthflprpvdpervpelykdllmyt 211


RESULT 3
AAW11548
ID   AAW11548 standard; Protein; 220 AA.
XX
AC   AAW11548;
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XX
DT   17-SEP-1997  (first entry)
XX
DE   Amino acid sequence of chicken FGF9 encoded by FGF9.pBT 3C.
XX
KW   Mouse; chicken; fibroblast growth factor 9; FGF9; detection;
KW   fibroblast growth factor receptor 3; FGFR3; cartilage repair;
KW   bone repair; antagonist; anti-FGF9 antibody; endochondromas;
KW   solitary hereditary exostosis; multiple hereditary exostosis;
KW   hallux valgus deformity; achondroplasia; synovial chondromatosis
XX
OS   Gallus domesticus.
XX
FH   Key             Location/Qualifiers
FT   Misc difference 216
FT                   /note= "Given in the specification as J, encoded by TGA"
XX
PN   WO9641523-A1.
XX
PD   27-DEC-1996.
XX
PF   12-JUN-1996;   96WO-IL00011.
XX
PR   12-JUN-1995;   95US-0000147.
XX
PA   (YEDA ) YEDA RES & DEV CO LTD.
XX
PI   Yayon A;
XX
DR   WPI; 1997-065215/06.
DR   N-PSDB; AAT58531.
XX
PT   Medical and diagnostic use of fibroblast growth factor 9 - and
PT   recombinant fibroblast growth factor 9 DNA
XX
PS   Claim 13; Fig 2; 32pp; English.
XX
CC   The sequences given in AAW11547-48 represent mouse and chicken
CC   fibroblast growth factor 9 (FGF9) respectively.  FGF9 may be used in the
CC   method of the invention for detecting fibroblast growth factor receptor 3
CC   (FGFR3) in a sample or tissue.  The method comprises contacting the
CC   sample or tissue with FGF9, allowing formation of receptor-ligand pairs,
CC   and detecting any FGFR3-FGF9 pairs.  Compositions .containing FGF9 can
CC   be used to increase FGFR3 activity, esp. to stimulate cartilage or bone
CC   repair. Compositions containing FGF9 antagonists or FGF9 binding agents
CC   (e.g. anti-FGF9 antibodies) can be used to treat diseases caused by an
CC   excess of FGF9 or overactivity of FGFR3, e.g. multiple or solitary
CC   hereditary exostosis, hallux valgus deformity, achondroplasia, synovial
CC   chondromatosis and endochondromas.
XX
SQ   Sequence   220 AA;

  Query Match             69.6%;  Score 778.5;  DB 18;  Length 220;
  Best Local Similarity   71.6%;  Pred. No. 3.1e-75;
  Matches  151;  Conservative   19;  Mismatches   32;  Indels    9;  Gaps    4;

Qy          1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARG---GPGAAQL 57
              |||| |||  : |   : :      |:     ||     : | || :        ||   | |     ||       |
Db          8 maplgevgnyfgvqdav--ptgnvpalp--adspvllsdhlqqae--aqqlprqpavtdl 61

Qy         58 AHLHGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGL 117
                || ||||||||||||||||:| |:|::||||||||| ||||||||:||||||||||||||
Db         62 dhlkgilrrrqlycrtgfhleifpngtiqgtrqdhsrfgilefisiavglvsirgvdsgl 121

Qy        118 YLGMNDKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRD 177
              |||||:|||||||||||| ||:||||||||||||||||||:|:| ||||||:||||||||||:
Db        122 ylgmnekgelygsekltpecvfreqfeenwyntyssnlykhvdtgrryyvalnkdgtpre 181

Qy        178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
              | |:||||||||| ||||||:||||||||:|
Db        182 gtrtkrhqkfthflprpvdpdkvpelykdil 212
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RESULT   4
AAR27207
ID   AAR27207 standard; Protein; 208 AA.
XX
AC   AAR27207;
XX
DT   29-MAY-1998  (first entry)
XX
DE   Glia activating factor #1.
XX
KW   GAF; stimulates glial cell growth; cerebral nerve cell lesions;
KW   cerebral oedema; alzheimers disease; senile dementia;
KW   diabetic neuropathy, stimulates fibroblasts, burns, wounds, ulcers;
KW   stimulates megakaryocytes; increase platelets; haematopoetic cells;
KW   immunocompetent cells, vascular smooth muscle cells; bone fractures;
KW   osteogenesis promoting activity; osteoporosis, cerebral tumours;
KW   stimulates cultured cells.
XX
OS   Homo sapiens.
XX
PN   EP503297-A.
XX
PD   16-SEP-1992.
XX
PF   13-FEB-1992;   92EP-0102385.
XX
PR   14-FEB-1991;   91JP-0020860.
PR   04-SEP-1991;   91JP-0224454.
PR   10-JAN-1992;   92JP-0003399.
XX
PA   (TAKE ) TAKEDA CHEM IND LTD.
XX
PI   Kondo T, Kurokawa T, Naruo K, Seko C;
XX
DR   WPI; 1992-309482/38.
DR   N-PSDB; AAQ28411.
XX
PT   Glia activating factor and its DNA - specifically promotes growth
PT   of glial cells, for treating e.g. cerebral lesions, Alzheimer's
PT   disease, diabetic neuropathies, etc., also in diagnosis
XX
PS   Claim 1; Fig 19; 87pp; English.
XX
CC   This sequence represents a glia activating factor. It is expressed
CC   in monkey COS 7 cells. It stimulates the growth of glia cells and
CC   can be used to accelerate healing of cerebral lesions or treat cerebral
CC   oedema, alzheimers disease, senile dementia, or diabetic neuropathy. It
CC   also stimulates fibroblasts (for accelerating healing of burns, wounds,
CC   ulcers, etc) megakaryocytes (to increase the no. of platelets),
CC   haematopoietic, immunocompetent and vascular smooth muscle cells. It is
CC   also expected to have osteogenesis-promoting activity (for treating
CC   bone fractures and osteoporosis) Assay of this factor may be useful in
CC   diagnosis of cerebral tumours, and antibodies against could be used to
CC   treat such tumours. It can also be used as a reagent for stimulating
CC   growth of cultured cells. Dosage is 1ng-0.1mg/kg/day.
XX
SQ   Sequence   208 AA;

  Query Match             69.3%;  Score 774.5;  DB 13;  Length 208;
  Best Local Similarity   70.6%;  Pred. No. 7.8e-75;
  Matches  149;  Conservative   23;  Mismatches   30;  Indels    9;  Gaps    4;

Qy          1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARG---GPGAAQL 57
              |||| |||   |        |    ||     | |         :| | |   ||    |
Db          1 maplgevgnyfgvqdav--ptgnvpvlpv--despllsdhlgqse--aqglprgpavtdl 54

Qy         58 AHLHGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGL 117
                || |||||||||||||||:| |:|::|||:||| ||||||||:||||||||||||||
Db         55 dhlkgilrrrqlycrtgfhleifpngtiqgtrkdhsrfgilefisiavglvsirgvdsgl 114

Qy        118 YLGMNEKGLLYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRD 177
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              ||||:|||||||||| ||:|||||||||||||||:||| ||||||:|||||||||:
Db      115 ylqmnekqelyqseklTqeTfreqfeenwyntyssnlykh.dtgrryyvalnkdgtpre 171

Qy      178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
             | :|||||||||||||||::|||||||:|
Db      175 qtrtkrhqkfthflprpvdpdkvpelykdll 205
```

RESULT 5
AAR27213
ID   AAR27213 standard; Protein; 208 AA.
XX
AC   AAR27213;
XX
DT   20-MAY-1998 (first entry)
XX
DE   Glia activating factor #7.
XX
KW   GAF; stimulates glial cell growth; cerebral nerve cell lesions;
KW   cerebral oedema, alzheimers disease; senile dementia;
KW   diabetic neuropathy; stimulates fibroblasts; burns; wounds; ulcers;
KW   stimulates megakaryocytes, increase platelets; haematopoetic cells;
KW   immunocompetent cells, vascular smooth muscle cells; bone fractures;
KW   osteogenesis promoting activity; osteoporosis; cerebral tumours;
KW   stimulates cultured cells.
XX
OS   Homo sapiens.
XX
PN   EP503297-A.
XX
PD   16-SEP-1992.
XX
PF   13-FEB-1992;   92EP-0102385.
XX
PR   14-FEB-1991;   91JP-0020860.
PR   04-SEP-1991;   91JP-0224454.
PR   10-JAN-1992;   92JP-0003399.
XX
PA   (TAKE) TAKEDA CHEM IND LTD.
XX
PI   Kondo T, Kurokawa T, Naruo K, Seko C,
XX
DR   WPI; 1992-309482/38.
XX
PT   Glia activating factor and its DNA - specifically promotes growth
PT   of glial cells, for treating e.g. cerebral lesions, Alzheimer's
PT   disease, diabetic neuropathies, etc., also in diagnosis
XX
PS   Claim 1; Pg5; 7pp; English.
XX
CC   This sequence represents a glia activating factor. It stimulates the
CC   growth of glia cells and can be used to accelerate healing of cerebral
CC   lesions or treat cerebral oedema, alzheimers disease, senile dementia,
CC   or diabetic neuropathy. It also stimulates fibroblasts (for accelerating
CC   healing of burns, wounds, ulcers, etc) megakaryocytes (to increase the
CC   no. of platelets), haematopoietic, immunocompetent and vascular smooth
CC   muscle cells. It is also expected to have osteogenesis-promoting activity
CC   (for treating bone fractures and osteoporosis) Assay of this factor may
CC   be useful in diagnosis of cerebral tumours, and antibodies against could
CC   be used to treat such tumours. It can also be used as a reagent for
CC   stimulating growth of cultured cells. Dosage is 1ng-0.1mg/kg/day.
XX
SQ   Sequence   208 AA;

```
  Query Match             69.3%;  Score 774.5;  DB 13;  Length 208;
  Best Local Similarity   70.6%;  Pred. No. 7.8e-75;
  Matches  149;  Conservative   23;  Mismatches   30;  Indels    9;  Gaps    4;

Qy        1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARG---GPGAAQL 57
            |||| |||  : |  :  :      |:  :||   : | || :     :|  |  |   ||   |
Db        1 maplaevgnyfgvqdav--pfgnvpvlpv--dspvllsdhlgqse   agglprgpavtdl 54
```

RESULT 6
AAR56505
ID   AAR56505 standard; peptide; 208 AA.
XX
AC   AAR56505;
XX
DT   06-MAR-1995 (first entry)
XX
DE   Glia activating factor (GAF) peptide.
XX
KW   Glia activating factor, GAF; testing, detection, antibody, cancer;
KW   osteogenesis; platelet; hepatopathy; cirrhosis; anticancer agent.
XX
OS   Homo sapiens.
XX
PN   EP608546-A.
XX
PD   03-AUG-1994.
XX
PF   18-DEC-1993;   93EP-0120491.
XX
PR   22-DEC-1992;   92JP-0342100.
PR   23-AUG-1993;   93JP-0207719.
XX
PA   (TAKE) TAKEDA CHEM IND LTD.
XX
PI   Kurokawa T, Kuroshima K, Seko C, Yoshitomi S;
XX
DR   WPI; 1994-242006/30.
XX
PT   New glia activating factor polypeptide and antibodies - for use
PT   in detection, purification and treatment of diseases, e.g. as
PT   anticancer or platelet-increasing agents.
XX
PS   Disclosure; Page 40-41; 80pp; English.
XX
CC   The glia activating factor (GAF) polypeptides (See AAR56503-56511) can
CC   be used as platelet increasing agents, osteogenesis promoting
CC   agents or for treating cerebral nervous diseases or hepatopathy, such
CC   as hepatic cirrhosis. They can also be used to treat cancer when
CC   used alongside an anticancer agent. Antibodies directed against the
CC   GAF polypeptides can be used for detecting or determining a
CC   biological activity of a GAF polypeptide or for purifying a GAF
CC   polypeptide. The antibodies, which also neutralise the cell growth
CC   activity of GAF, can be used as anticancer agents.
XX
SQ   Sequence   208 AA;

```
  Query Match             69.3%;  Score 774.5;  DB 15;  Length 208;
  Best Local Similarity   70.6%;  Pred. No. 7.8e-75;
  Matches  149;  Conservative   23;  Mismatches   30;  Indels    9;  Gaps    4;

Qy        1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARG---GPGAAQL 57
            |||| |||  : |  :  :      |:  :||   : | || :     :|  |  |   ||   |
Db        1 maplgevgnyfgvqdav--pfgnvpvlpv--dspvllsdhlgqse   agglprgpavtdl 54

Qy       58 AHLHGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGL 117
              |: |||||:||||||||||.| |.|..||||.::: ||:||||:.|||||||||||||
Db       55 dhlkgilrrrqlycrtgfhleifpngtiqgtrkdhsrfgilefisiavglvsirgvdsgl 114
```

```
Qy       58 AHLHGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGL 117
              |: |||||:||||||||||.| |.|..||||.::: ||:||||:.|||||||||||||
Db       55 dhlkgilrrrqlycrtgfhleifpngtiqgtrkdhsrfgilefisiavglvsirgvdsgl 114

Qy      118 YLGMNEKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRD 177
             |||||:||||||||||| ||:||||||||||||||||:|||  ||||||:||||||||:
Db      115 ylgmnekqelyqsekltqecvfreqfeenwyntyssnlykhvdtgrryyvalnkdgtpre 174

Qy      178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
             | :|||||||||||||||::|||||||:|
Db      175 qtrtkrhqkfthflprpvdpdkvpelykdll 205
```

```
Qy   118 YLGMNDKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRD 177
         ||||:||||||||||| ||:|||||||||||||||||:||| ||||||:||||||||||:
Db   115 ylgmnekgelygsekltqecvfreqfeenwyntyssnlykhvdtgrryyvalnkdgtpre 174

Qy   178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
          | |:|||||||||||||||::|||||||:|
Db   175 qtrtkrhqktthflprpvdpdkvpelykdil 205
```

RESULT 7
AAR80784
ID AAR80784 standard; Protein; 208 AA.
XX
AC AAR80784;
XX
DT 13 MAY 1996 (first entry)
XX
DE Fibroblast growth factor 9, FGF-9.
XX
KW Conjugate; fibroblast growth factor; FGF; cytotoxin; saporin; eye;
KW cell proliferation; regulation; pterygia; corneal clouding; cancer;
KW psoriasis; rheumatoid arthritis.
XX
OS Homo sapiens.
XX
PN WO9524928 A2.
XX
PD 21 SEP 1995.
XX
PF 15 MAR 1995; 95WO-US03448.
XX
PR 15 MAR 1994; 94US-0213447.
PR 15 MAR 1994; 94US-0213446.
XX
PA (FRIZ) FRIZM PHARM INC.
XX
PI Baird JA, Houston LL, Nova MP, Sosnowski BA;
XX
DR WPI; 1995-336820/43.
XX
PT New conjugates of growth factor receptor ligand and targetted agent
PT - partic. DNA or cytotoxin, used to control cell proliferation in
PT the eye, e.g. to prevent growth of pterygii and corneal clouding
XX
PS Claim 33; Page 148; 204pp; English.
XX
CC AAR80776-84 are fibroblast growth factors (FGF) FGF-1 to FGF-9
CC respectively. DNA encoding these fibroblast growth factors can be
CC used to create an FGF/saporin fusion protein. DNA encoding such fusion
CC proteins are useful for targetting saporin (a cytotoxin) to a cell
CC carrying the FGF receptor. Targetted agents (TA) other than saporin
CC which may be used include in partic. DNA encoding a therapeutic protein,
CC antisense DNA or other cytotoxic agent. The linker sequence within the
CC fusion protein may increases serum stability or intracellular
CC availability of the TA. The conjugates of the invention are used to
CC inhibit cell proliferation in cells carrying the particular growth
CC factor receptor; also when TA is DNA it can be used to deliver this
CC to cells (for gene therapy). A specific application is to prevent
CC excessive proliferation of epithelial cells, fibroblasts and
CC keratinocytes in the anterior eye after surgery, partic. to prevent
CC recurrence of pterygii after surgical removal, closure of
CC trabeculectomy after glaucoma surgery and corneal clouding after
CC eximer laser treatment. Other conditions which may be treated include
CC tumours, restenosis, psoriasis, Dupuytren's contracture, diabetic
CC complications, Kaposi's sarcoma and rheumatoid arthritis.
XX
SQ Sequence 208 AA;

Query Match 69.3%; Score 774.5; DB 16; Length 208;
Best Local Similarity 70.6%; Pred. No. 7.8e-75;
Matches 149; Conservative 23; Mismatches 30; Indels 9; Gaps 4;

```
Qy     1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARGG---GPGAAQL 57
         |||| |||  :  |   :  :      |:  :||    :  | || :       :|  | |    ||    |
Db     1 maplgevgnyfgvqda---ptanvpvlr--dspelldhlqqse--rrlprqprtdl 54

Qy    58 AHLHGILRRRQLYCRTGFHLQIHPDGSVQGTRQDHSRFGILEFISVAVGLVSIRGVDSGL 117
          || ||||||||||||||| |::|||:||| |||||||:||||||||||||||||||
Db    55 dhlkgilrrrqlyartgfhleifpngtiqgtrkdhsrfgilefisiaagrvsierdsgl 114

Qy   118 YLGMNDKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRD 177
         ||||:||||||||||| ||:|||||||||||||||||:||| ||||||:||||||||||:
Db   115 ylgmnekgelygsekltqecvfreqfeenwyntyssnlykhvdtgrryyvalnkdgtpre 174

Qy   178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
          | |:|||||||||||||||::|||||||:|
Db   175 qtrtkrhqktthflprpvdpdkvpelykdil 205
```

RESULT 8
AAR70822
ID AAR70822 standard; protein; 208 AA.
XX
AC AAR70822;
XX
DT 01-SEP-1995 (first entry)
XX
DE FGF-9.
XX
KW FGF-9; fibroblast growth factor; cytotoxic conjugate; fusion protein;
KW saporin; cytostatic; tumor; diabetes; rheumatoid arthritis.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Misc-difference 68
FT /note= "Cys may be replaced by Ser"
XX
PN WO9503831-A.
XX
PD 09-FEB-1995.
XX
PF 27-JUL-1994; 94WO-US08511.
XX
PR 02-AUG-1993; 93US-0099924.
PR 29-OCT-1993; 93US-0145829.
XX
PA (FRIZ-) FRIZM PHARM INC.
PA (WHIT-) WHITTIER INST DIABETES & ENDOCRINOLOGY.
XX
PI Baird AJ, Lappi DA, Sosnowski BA;
XX
DR WPI; 1995-082038/11.
XX
PT New monogenous preparations of cytotoxic conjugates and DNA -
PT contain fibroblast growth factors and cytotoxic agents for
PT treating FGF conditions such as tumours, diabetes and rheumatoid
PT arthritis.
XX
PS Disclosure; Page 115-116; 128pp; English.
XX
CC Novel fusion proteins comprise FGF linked to saporin. FGF-1 to -9
CC may be used, pref. muteins in which at least 1 Cys residue is
CC replaced by conservative Ser substitutions. The fusion proteins
CC are potent cytocidal agents to cells bearing the FGF receptor.
XX
SQ Sequence 208 AA;

Query Match 69.3%; Score 774.5; DB 16; Length 208;
Best Local Similarity 70.6%; Pred. No. 7.8e-75;
Matches 149; Conservative 23; Mismatches 30; Indels 9; Gaps 4;

```
Qy     1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARGG---GPGAAQL 57
```

```
               |||| ||| : |   : :     |:   :||    : | || :     :|  | |    ||      |
Db          1 maplgevgnyfgvqdav pfgnvpvlpv dspvllsdhlgqse  agglprgpavtdl 54

Qy         58 AHLHGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGL 117
                || ||||||||||||||||:| |:|::||||:||| ||||||||:||||||||||||||
Db         55 dhlkgilrrrqlycrtgfhleifpngtiqgtrkdhsrfgilefisiavglvsirgvdsgl 114

Qy        118 YLGMNDKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRD 177
              |||||:|||||||||||| ||:||||||||||||||||:||| ||||||:||||||||||:
Db        115 ylgmnekgelygsekltqecvfreqfeenwyntyssnlykhvdtgrryyvalnkdgtpre 174

Qy        178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
              | |:||||||||||||||||::||||||||:|
Db        175 gtrtkrhqkfthflprpvdpdkvpelykdil 205
```

RESULT 9
AAW11547
ID AAW11547 standard; Protein; 208 AA.
XX
AC AAW11547;
XX
DT 17-SEP-1997 (first entry)
XX
DE Amino acid sequence of mouse FGF9 encoded by FGF9:pET-3C.
XX
KW Mouse; chicken; fibroblast growth factor 9; FGF9; detection;
KW fibroblast growth factor receptor 3; FGFR3; cartilage repair;
KW bone repair; antagonist; anti-FGF9 antibody; endochondromas,
KW solitary hereditary exostosis, multiple hereditary exostosis,
KW hallux valgus deformity; achondroplasia; synovial chondromatosis.
XX
OS Mus musculus.
XX
PN WO9641523-A1.
XX
PD 27-DEC-1996.
XX
PF 12-JUN-1996; 96WO-IL00011.
XX
PR 12-JUN-1995; 95US-0000137.
XX
PA (YEDA) YEDA RES & DEV CO LTD.
XX
PI Yayon A;
XX
DR WPI; 1997-065215/06.
DR N-PSDB; AAT58530.
XX
PT Medical and diagnostic use of fibroblast growth factor 9 - and
PT recombinant fibroblast growth factor 9 DNA
XX
PS Claim 12; Fig 1; 32pp; English.
XX
CC The sequences given in AAW11547-48 represent mouse and chicken
CC fibroblast growth factor 9 (FGF9) respectively. FGF9 may be used in the
CC method of the invention for detecting fibroblast growth factor receptor 3
CC (FGFR3) in a sample or tissue. The method comprises contacting the
CC sample or tissue with FGF9, allowing formation of receptor-ligand pairs,
CC and detecting any FGFR3-FGF9 pairs. Compositions .containing FGF9 can
CC be used to increase FGFR3 activity, esp. to stimulate cartilage or bone
CC repair. Compositions containing FGF9 antagonists or FGF9 binding agents
CC (e.g. anti-FGF9 antibodies) can be used to treat diseases caused by an
CC excess of FGF9 or overactivity of FGFR3, esp. multiple or solitary
CC hereditary exostosis, hallux valgus deformity, achondroplasia, synovial
CC chondromatosis and endochondromas.
XX
SQ Sequence 208 AA;

Query Match 69.3%; Score 774.5; DB 18; Length 208;
Best Local Similarity 70.6%; Pred. No. 7.8e-75;
Matches 149; Conservative 23; Mismatches 30; Indels 9; Gaps 1;

```
Qy          1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARGG---GPGAAQL 57
              |||| ||| : |   : :     |:   :||    : | || :     :|  | |    ||      |
Db          1 maplgevgsytgvqdav pfgnvpvlpv dspvllsdhlgqse  agglprgpavtdl 54

Qy         58 AHLHGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGL 117
                || ||||||||||||||||:| |:|::||||:||| ||||||||:||||||||||||||
Db         55 dhlkgilrrrqlycrtgfhleifpngtiqgtrkdhsrfgilefisiavglvsirgvdsgl 114

Qy        118 YLGMNDKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRD 177
              |||||:|||||||||||| ||:||||||||||||||||:||| ||||||:||||||||||:
Db        115 ylgmnekgelygsekltqecvfreqfeenwyntyssnlykhvdtgrryyvalnkdgtpre 174

Qy        178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
              | |:||||||||||||||||::||||||||:|
Db        175 gtrtkrhqkfthflprpvdpdkvpelykdil 205
```

RESULT 10
AAW75719
ID AAW75719 standard; Protein; 208 AA.
XX
AC AAW75719;
XX
DT 07 DEC 1998 (first entry)
XX
DE Fibroblast growth factor-9.
XX
KW Fibroblast growth factor-9; FGF-9; mutein; protein engineering;
KW heparin, thrombosis, thromocytopenia; ophthalmic disorder;
KW human, therapy.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Misc-difference 136
FT /note= "Phe-136 is replaced by another amino acid
FT acid (Claim 3), preferably Ala, Phe, Ser,
FT Gly, Met, Leu or Tyr, especially Ala, Gly
FT or Ser"
FT Misc difference 137
FT /note= "Glu-137 may be replaced by another amino
FT acid (Claim 7), preferably Ala, Gly or Ser"
FT Misc-difference 143
FT /note= "Asn-143 may be replaced by another amino
FT acid (Claim 2), preferably Ala, Phe, Ser,
FT Gly, Met, Leu or Tyr, especially Ala, Gly
FT or Ser"
FT Misc-difference 146
FT /note= "Asn 146 may be replaced by another amino
FT acid (Claim 1), preferably Ala, Phe, Ser,
FT Gly, Met, Leu or Tyr, especially Ala, Gly
FT or Ser"
XX
PN WO9839436-A2.
XX
PD 11-SEP-1998.
XX
PF 03-MAR-1998; 98WO-JP00878.
XX
PR 03-MAR-1997; 97US-0040785.
XX
PA (EISA) EISAI CO LTD.
XX
PI Kalyanaraman K, Kawai T, Zhu H;
XX
DR WPI; 1998-495843/42.
XX
PT Fibroblast growth factor mutein and DNA - having reduced receptor
PT binding and able to bind heparin, useful for treating and regulating
PT heparin-related disorders e.g. thrombosis
XX
PS Disclosure; Page 59-60; 71pp; English.

```
XX
CC   This is the amino acid sequence of fibroblast growth factor-9
CC   (FGF-9).  Claimed DNA molecules of the invention encode FGF mutein
CC   polypeptides (see AAW75711-20) that show reduced FGF receptor binding
CC   activity but which retain the ability to bind heparin.  For FGF-9,
CC   amino acid residues 136, 143 and 146 are preferably replaced by
CC   other amino acid residues, with an optional further replacement of
CC   the Glu 137 residue.  The mutein may be further modified by
CC   replacement of the Cys residues to reduce aggregation.  The mutein
CC   is obtained by site-specific or site directed mutagenesis of FGF-9
CC   DNA, incorporation of the mutated DNA into a vector and expression
CC   in host cells.  The FGF muteins are used to treat heparin-related
CC   disorders, such as excessive bleeding induced by heparin,
CC   ophthalmic disorders and heparin-associated thrombocytopenia and
CC   thrombosis.  They may also be used for drug design.
XX
SQ   Sequence   208 AA;

  Query Match             69.3%;  Score 774.5;  DB 19;  Length 208;
  Best Local Similarity   70.6%;  Pred. No. 7.8e-75;
  Matches  149;  Conservative   23;  Mismatches   30;  Indels    9;  Gaps    4;

Qy          1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARG---GPGAAQL 57
              |||| ||| : |  : :      |:  :||   : | || :      :|  | |   ||     |
Db          1 maplgevgnyfgvqdav-pfgnvpvlpv---dspvllsdhlgqse--agglprgpavtdl 54

Qy         58 AHLHGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGL 117
                || ||||||||||||||||:| |:|::||||:||| ||||||||:||||||||||||||
Db         55 dhlkgilrrrqlycrtgfhleifpngtiqgtrkdhsrfgilefisiavglvsirgvdsgl 114

Qy        118 YLGMNEKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRD 177
              |||||:|||||||||||| ||:||||||||||||||||:||| ||||||:||||||||||:
Db        115 ylgmnekgelygseklteecvfreqfeenwyntyssnlykhvdtgrryyvalnkdgtpre 174

Qy        178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
              | |:||||||||||||||||::|||||||:|
Db        175 gtrtkrhqkfthflprpvdpdkvpelykdil 205


RESULT 11
AAW53024
ID   AAW53024 standard; Protein; 208 AA.
XX
AC   AAW53024;
XX
DT   14-AUG-1998  (first entry)
XX
DE   Fibroblast growth factor protein 9.
XX
KW   FGF; cell growth; survival; differentiation; central nervous system;
KW   peripheral nervous tissue; treatment; diagnosis; cell culture.
XX
OS   Mammalian.
XX
PN   WO9808864-A1.
XX
PD   05-MAR-1998.
XX
PF   27-AUG-1997;   97WO-US15237.
XX
PR   30-AUG-1996;   96US-0705245.
XX
PA   (UYJO ) UNIV JOHNS HOPKINS SCHOOL MEDICINE.
XX
PI   Nathans J,  Smallwood PM.
XX
DR   WPI; 1998-179380/16.
XX
PT   New fibroblast growth factor homologous factors - useful for, e.g.
PT   developing products for diagnosis and treatment of conditions
PT   involving neuro-degenerative and neoplastic disorders
XX
PS   Disclosure; Page 52; 94pp; English.
XX
CC   Fibroblast growth factor (FGF) proteins (AAW53022-W53024 and
CC   AAW53029-W53034) are members of the fibroblast growth factor family and
CC   have homology to Fibroblast growth factor homologous factor (FHF)
CC   proteins.  The FHF proteins (FHF 1-4) are involved in regulating the
CC   growth, survival, and differentiation of cells in the central nervous
CC   system, as well as cells in peripheral nervous tissues.  The proteins can
CC   therefore be used for treating and diagnosing conditions involving the
CC   nervous system.  FHF's can also be used in methods for maintaining
CC   cultured cells or tissues or to promote neuron growth in vitro.
XX
SQ   Sequence   208 AA;

  Query Match             69.3%;  Score 774.5;  DB 19;  Length 208;
  Best Local Similarity   70.6%;  Pred. No. 7.8e-75;
  Matches  149;  Conservative   23;  Mismatches   30;  Indels    9;  Gaps    4;

Qy          1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARG---GPGAAQL 57
              |||| ||| : |  : :      |:  :||   : | || :      :|  | |   ||     |
Db          1 maplgevgnyfgvqdav-pfgnvpvlpv---dspvllsdhlgqse--agglprgpavtdl 54

Qy         58 AHLHGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGL 117
                || ||||||||||||||||:| |:|::||||:||| ||||||||:||||||||||||||
Db         55 dhlkgilrrrqlycrtgfhleifpngtiqgtrkdhsrfgilefisiavglvsirgvdsgl 114

Qy        118 YLGMNEKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRD 177
              |||||:|||||||||||| ||:||||||||||||||||:||| ||||||:||||||||||:
Db        115 ylgmnekgelygseklteecvfreqfeenwyntyssnlykhvdtgrryyvalnkdgtpre 174

Qy        178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
              | |:||||||||||||||||::|||||||:|
Db        175 gtrtkrhqkfthflprpvdpdkvpelykdil 205


RESULT 12
AAB10299
ID   AAB10299 standard; Protein; 208 AA.
XX
AC   AAB10299;
XX
DT   20-NOV-2000  (first entry)
XX
DE   Fibroblast growth factor FGF9 protein SEQ ID NO: 18.
XX
KW   Human; keratinocyte growth factor; KGF-2; antiulcer; antidiabetic;
KW   antiinflammatory; cytoprotective; dermatological; gastrointestinal;
KW   hepatic; respiratory; renal; cerebroprotective; mucositis; treatment;
KW   epithelial cell proliferation; inflammatory bowel disease; lung damage;
KW   liver disorder; diabetes; oral injury; gastrointestinal injury;
KW   gut toxicity; gastric; duodenal; epidermolysis bullosa; skin graft;
KW   skin disorder; renal failure; brain injury; intestinal fibrosis;
KW   proctitis, female reproductive tract disorder; pulmonary fibrosis;
KW   pneumonitis, pleural retraction; hemopoietic syndrome; myelotoxicity;
KW   fibroblast growth factor; FGF9.
XX
OS   Unidentified.
XX
PN   US6077692-A.
XX
PD   20-JUN-2000.
XX
PF   13-FEB-1998;   98US-0023082.
XX
PR   12-AUG-1996;   96US-0023852.
PR   28-FEB-1997;   97US-0039045.
PR   13-AUG-1997;   97US-0055561.
PR   05-JUN-1995;   95US-0461195.
PR   14-FEB-1995;   95WO-US01790.
PR   23-MAY-1997;   97US-0862432.
PR   13-AUG-1997;   97US-0910875.
XX
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```
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Hendrick L, Duan DR, Ni J, Jimenez P, Coleman TA, Gruber JR;
PI   Lillien RL, Gentz RL, Ruben SM, Zhang J, Moore PA, Rampy MA;
XX
DR   WPI; 2000-441587/38.
XX
PT   Novel keratinocyte growth factor useful for promoting and accelerating
PT   wound healing, comprising at least 10 contiguous amino acids from a
PT   specific amino acid sequence -
XX
PS   Disclosure; Fig 2A-C; 199pp; English.
XX
CC   This invention describes a novel human keratinocyte growth factor, KGF-2
CC   (I), which has antiulcer, antidiabetic, antiinflammatory, cytoprotective,
CC   dermatological, gastrointestinal, hepatic, respiratory, renal and
CC   cerebroprotective activity. (I) is useful for stimulating epithelial cell
CC   proliferation in patients suffering from wound, mucositis, ulcer such as
CC   venous stasis ulcer, diabetic ulcer and cubitus ulcer. (I) is also useful
CC   for treating inflammatory bowel disease, liver disorder, lung damage,
CC   diabetes, oral injury, gastrointestinal injury, gut toxicity, gastric
CC   ulcer, duodenal ulcer, epidermolysis bullosa, skin graft, skin disorder,
CC   renal failure, brain injury, breast tissue injury, urothelial damage,
CC   female reproductive tract disorder, intestinal fibrosis, proctitis,
CC   pulmonary fibrosis, pneumonitis, pleural retraction, hemopoietic syndrome
CC   and myelotoxicity. (I) is also useful for enhancing the adherence of
CC   skin grafts to wound beds and to stimulate re-epithelialization from the
CC   wound bed, to produce changes in hepatocyte proliferation, to reduce the
CC   side effects of gut toxicity, to regenerate skin in full and partial
CC   thickness skin defects, and to prevent and heal damage to lungs. KGF-2
CC   shows enhanced activity, increased stability, higher yield and better
CC   solubility. This sequence represents the fibroblast growth factor FGF9
CC   which is described in the method of the invention.
XX
SQ   Sequence   208 AA;

  Query Match              69.3%;  Score 774.5;  DB 21;  Length 208;
  Best Local Similarity   70.6%;  Pred. No. 7.8e-75;
  Matches  149;  Conservative   23;  Mismatches   30;  Indels    9;  Gaps    4;

Qy          1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARGG---GPGAAQL 57
                |||| |||  :  |    :  :       |:   :||      :  |  ||  :       :|   |  |      ||       |
Db          1 maplgevgnyfgvqdav--ptgerpvlpv--dspvllsdhlqqse--aqlprgpavtdl 54

Qy         58 AHLHGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGL 117
                 ||  ||||||||||||||||:|  |:|::||||:|||  |||||||||:|||||||||||||||
Db         55 dhlkgilrrrqlycrtgfhlei[illegible] 114

Qy        118 YLGMNDKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRD 177
                |||:|:||||||||||||  ||:|||||||||||||||||||||:|||  ||||||:||||||||||||:
Db        115 ylgmnekgelygsekltpecefreqfeenwyntyssnlykhvdtgrryyvalnkdgtpre 174

Qy        178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
                 |  :||||||||||||||||.|::||||||.|:|
Db        175 qtrtkrhqkfthflprpvdpdkvpelykdil 205


RESULT 13
AAY87856
ID   AAY87856 standard; protein; 208 AA.
XX
AC   AAY87856;
XX
DT   01-SEP-2000  (first entry)
XX
DE   Human FGF-9 protein fragment.
XX
KW   FGF-9; fibroblast growth factor; cardiant; treatment; angiogenesis;
KW   coronary artery disease; myocardial infarction injury; human.
XX
OS   Homo sapiens.
XX
PN   WO200021548-A2.
XX
PD   20-APR-2000.
XX
PF   13-OCT-1999;   99WO-US22936.
XX
PR   13-OCT-1998;   98US-0104103.
XX
PA   (CHIR ) CHIRON CORP.
PA   (WHIT/) WHITEHOUSE M J.
XX
PI   Kavanaugh WM;
XX
DR   WPI; 2000-317910/27.
XX
PT   Novel unit dose comprising fibroblast growth factor, its angiogenically
PT   active fragment or mutein for inducing cardiac angiogenesis, treating
PT   coronary artery disease and reducing post myocardial infarction injury
PT   -
XX
PS   Claim 1; Page 64-65; 67pp; English.
XX
CC   This invention describes a novel unit dose (I), of fibroblast growth
CC   factor (FGF) comprising 0.008-6.1 mg of a mammalian FGF comprising
CC   sequence of 140 ((II) and (III)), 146 ((IV) and (V)), 205 (VI), 266
CC   (VII), [illegible] (X) and [illegible] (XI),
CC   given in the specification, its angiogenically active fragment or
CC   mutein. The product of the invention has angiogenic and cardiant
CC   activity. (I) is used for treating a human patient for coronary artery
CC   disease, and inducing angiogenesis in the human heart. (I) further
CC   provides an adjunct for reducing post myocardial infarction injury in
CC   humans. The unit dose provides the human patient with a rapid and
CC   therapeutic cardiac angiogenesis sufficient to obviate surgical
CC   intervention and results in an superior increase in the treated
CC   patient's exercise tolerance time (ETT). It also provides a safe and
CC   therapeutically efficacious treatment for the patients with coronary
CC   artery disease that lasts at least 6 months before a further treatment
CC   is needed. The method provides superior increase of 1.5-2 minutes in
CC   the treated patient's (ETT), compared to an increase of 30 seconds for
CC   current modes treatment. This sequence represents the human FGF-9 protein
CC   fragment described in the method of the invention.
XX
SQ   Sequence   208 AA;

  Query Match              69.3%;  Score 774.5;  DB 21;  Length 208;
  Best Local Similarity   70.6%;  Pred. No. 7.8e-75;
  Matches  149;  Conservative   23;  Mismatches   30;  Indels    9;  Gaps    4;

Qy          1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARGG---GPGAAQL 57
                |||| |||  :  |    :  :       |:   :||      :  |  ||  :       :|   |  |      ||       |
Db          1 maplgevgnyfgvqdav--ptgerpvlpv--dspvllsdhlqqse--aqlprgpavtdl 54

Qy         58 AHLHGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGL 117
                 ||  ||||||||||||||||:|  |:|::||||:|||  |||||||||:|||||||||||||||
Db         55 dhlkgilrrrqlycrtgfhlei[illegible]dal 114

Qy        118 YLGMNDKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRD 177
                |||:|:||||||||||||  ||:|||||||||||||||||||||:|||  ||||||:||||||||||||:
Db        115 ylgmnekgelygsekltpecefreqfeenwyntyssnlykhvdtgrryyvalnkdgtpre 174

Qy        178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
                 |  :||||||||||||||||.|::||||||.|:|
Db        175 qtrtkrhqkfthflprpvdpdkvpelykdil 205


RESULT 14
AAY90418
ID   AAY90418 standard; Protein; 208 AA.
XX
AC   AAY90418;
XX
DT   18-JUL-2000  (first entry)
```

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XX
DE   FGF-9, SEQ ID NO:18.
XX
KW   Targetted gene delivery; fibroblast growth factor receptor;
KW   FGFR-binding protein; FGF-2; bFGF; nucleic acid binding protein;
KW   receptor-internalised ligand; cytotoxin; saporin; gene therapy;
KW   cytocide; antiproliferative; cancer; melanoma; diabetic retinopathy;
KW   rheumatoid arthritis; restenosis; Dupuytren's contracture; psoriasis;
KW   eczema.
XX
OS   Unidentified.
XX
PN   US6037329-A.
XX
PD   14-MAR-2000.
XX
PF   24-SEP-1996;    96US-0718904.
XX
PR   15-MAR-1994;    94US-0213446.
PR   15-MAR-1994;    94US-0213447.
PR   29-AUG-1994;    94US-0297961.
PR   13-SEP-1994;    94US-0305771.
PR   16-MAY-1995;    95US-0441979.
XX
PA   (SELE-) SELECTIVE GENETICS INC.
XX
PI   Chandler LA,  Sosnowski PA,  Baird A.
XX
DR   WPI; 2000-292008/25.
XX
PT   Gene delivery system, useful for treating or preventing cancer and
PT   rheumatoid arthritis, comprises receptor-internalized ligand linked to
PT   nucleic acid binding domain and nucleic acid -
XX
PS   Claim 25; Columns 107-110; 131pp; English.
XX
CC   The invention relates to a novel gene delivery composition for the
CC   targetted delivery of cytotoxins or prodrug converting enzymes to
CC   proliferating cells. The gene delivery composition comprises a protein
CC   that binds the fibroblast growth factor receptor (FGFR) which is fused
CC   or chemically conjugated to a nucleic acid binding domain. The nucleic
CC   acid binding domain is complexed with a suitable expression construct
CC   encoding a cytotoxin such as saporin. One or more linkers may join the
CC   FGFR-binding protein to the nucleic acid binding protein. These are
CC   selected to increase the specificity, toxicity, solubility, serum
CC   stability or intracellular availability, and may serve to promote
CC   condensation of nucleic acids for delivery to a cell. The fusion protein
CC   binds to FGFR and is internalised by cells that carry this receptor. The
CC   gene delivery composition is used for the therapeutic alteration of the
CC   function, gene expression and viability of cells. In particular, it may
CC   be used for the treatment and prevention of cell proliferative
CC   disorders, for example after eye surgery, melanoma and many other sorts
CC   of cancer, rheumatoid arthritis, restenosis, Dupuytren's contracture,
CC   diabetic retinopathy, psoriasis and eczema. The gene delivery
CC   compositions of the invention have high specificity for particular cells
CC   and can deliver larger amounts of DNA compared to prior art methods.
CC   Sequences AAY90410- AAY90418 represent members of the fibroblast growth
CC   factor (FGF) family of proteins. AAY90418 represents wild type human
CC   FGF-2 (basic FGF, bFGF) which is encoded by AAA12868. AAA12897-AA12900
CC   encode the human FGF-2 muteins AAY90461-Y90464, and AAY90465-Y90466
CC   represent additional human FGF-2 muteins used in the invention. AAY90450
CC   represents a mutagenised FGF C-terminus.
XX
SQ   Sequence   208 AA;

  Query Match             69.3%;  Score 774.5;  DB 21;  Length 208;
  Best Local Similarity   76.6%;  Pred. No. 7.8e-75;
  Matches  149;  Conservative   23;  Mismatches   30;  Indels    9;  Gaps    4;

Qy          1 MAPLAEV[illegible]GQQVGSHFLLPPAGERPPLLGERRSAAERSARG   GPGAAQL 57
Db          1 maplgev[illegible] 54

Qy         58 AHLHGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGL 117
Db         55 [illegible] 114

Qy        118 YLGMN[illegible]LYGSEKLTSE[illegible]LENWYNTYSSNIYKHG[illegible]FVALNK[illegible] 177
Db        115 [illegible] 174

Qy        178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
Db        175 [illegible] 205


RESULT 15
AAY32341
ID   AAY32341 standard; protein; 208 AA.
XX
AC   AAY32341;
XX
DT   28-FEB-2000  (first entry)
XX
DE   Human fibroblast growth factor 9.
XX
KW   Fibroblast growth factor 9; FGF-9; human; mutein;
KW   vascular disorder; smooth muscle cell proliferation;
KW   rheumatoid arthritis; tumour; angiogenesis; Kaposi's sarcoma;
KW   restenosis; ophthalmic disorder; psoriasis; coagulant; heparin;
KW   thrombosis; thrombocytopenia.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 186
FT                   /note= "replaced with another amino acid in
FT                   claimed mutein of Claim 1"
FT   Misc-difference 130
FT                   /note= "replaced with another amino acid in
FT                   claimed mutein of Claim 5"
FT   Misc-difference 135
FT                   /note= "replaced with another amino acid in
FT                   claimed mutein of Claim 7"
XX
PN   WO9955861-A2.
XX
PD   04-NOV-1999.
XX
PF   15-APR-1999;    99WO-JP02013.
XX
PR   28-APR-1998;    98US-0067929.
XX
PA   (EISA ) EISAI CO LTD.
XX
PI   Zhu H,  Kalyanaraman R;
XX
DR   WPI; 2000-062030/05.
XX
PT   New polynucleotides encoding fibroblast growth factor muteins used for
PT   treatment of ophthalmic disorders, tumorigenic disorders and restenosis
PT   -
XX
PS   Claim 1; Page 85; 93pp; English.
XX
CC   This sequence represents human fibroblast growth factor 9 (FGF-9).
CC   The invention relates to isolated nucleic acids encoding FGF mutein
CC   polypeptides. FGF muteins that exhibit increased binding affinity
CC   for FGF receptors and reduced mitogenic activity are provided. Such
CC   muteins have amino acid replacements at positions corresponding to
CC   position 138 (claim 1) of FGF-2 (see AAY32331). They can be used to
CC   prevent or inhibit the undesired growth and proliferation of
CC   FGF responsive cells. Such cells occur in vascular disorders
CC   characterised by accelerated smooth muscle cell proliferation, such
CC   as rheumatoid arthritis, tumour angiogenesis, Kaposi's sarcoma,
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CC   restenosis, in-stent restenosis, certain ophthalmic disorders and
CC   dermatological disorders, such as psoriasis.  Also provided are
CC   FGF muteins that exhibit reduced receptor binding activity, but
CC   retain the ability to bind heparin.  These muteins have amino acid
CC   replacements corresponding to positions 88 (claim 5) and 93 (claim
CC   7) and optionally position 96 of FGF-2.  They can be used as
CC   coagulants for heparin-associated bleeding, antagonists of
CC   heparin-induced angiogenesis, and for treating heparin-induced
CC   thrombocytopenia and thrombosis.  In preferred muteins, the native
CC   FGF amino acid is replaced by Ala, Phe, Gly, Ser, Met or Tyr,
CC   especially Ala, Gly or Ser, and particularly Ala.  Cys residues
CC   may also be substituted to reduced polypeptide aggregation.
XX
SQ   Sequence  208 AA;

  Query Match             69.3%;  Score 774.5;  DB 21;  Length 208;
  Best Local Similarity   70.6%;  Pred. No. 7.8e-75;
  Matches  149;  Conservative   23;  Mismatches   30;  Indels    9;  Gaps    4;

Qy          1 MAPLAEVGGFLGGLEGLGQQVGSHFLLPPAGERPPLLGERRSAAERSARG    GPGAAQL 57
              |||| ||| : |   : :      |:  :||    : | || :      :|  | |     ||     |
Db          1 maplgevgnyfgvqdav--pfgnvpvlpv--dspvllsdhlgqse--aggplprgpavtdl 54

Qy         58 AHLHGILRRRQLYCRTGFHLQILPDGSVQGTRQDHSLFGILEFISVAVGLVSIRGVDSGL 117
                || ||||||||||||||||:| |:|::||||:||| ||||||||:||||||||||||||
Db         55 dhlkgilrrrqlycrtgfhleifpngtiqgtrkdhsrfgileflsiavglvsirgvdsgl 114

Qy        118 YLGMNDKGELYGSEKLTSECIFREQFEENWYNTYSSNIYKHGDTGRRYFVALNKDGTPRD 177
              |||||:|||||||||||| ||:||||||||||||||||||:||| ||||||:|||||||||:
Db        115 ylgmnekgelygsekltqecvfreqfeenwytysanlykhvdtgrryyvalnkdgtpre 174

Qy        178 GARSKRHQKFTHFLPRPVDPERVPELYKDLL 208
              |  |:||||||||||||||||||::||||||||:|
Db        175 gtrtkrhqkfthflprpvdpdkvpelykdil 205


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